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Highlights: Spring Council Meeting

Council members present at the May 24, 1981, meeting were Keiiti Aki, Steven Burges (for Jim Wallis), Peter S. Eagleson, E. R. Engdahl, Charles E. Helsley, James R. Heirtzler, Carl Kisslinger, Leslie H. Meredith, Chris N. K. Mooers, Norman F. Ness, Marcia M. Neugebauer, James J. O'Brien, Richard Rapp, Carl Sagan, James C. Savage, Joseph V. Smith, Fred Spilhaus, Donald L. Turcotte, James A. Van Allen, J. Tuzo Wilson, and Jay Winston (for Elmar R. Reiter until his arrival at 6:50 P.M.). David Strangway, representing the Canadian Geophysical Union, and Peter Steinhauser, representing the European Geophysical Society, were special observers at the meeting. Council meetings are open, and a number of section secretaries, committee chairmen, journal editors, and other members attended. The following major actions were adopted by the Council:

The experiment of publishing oceanography and lower-atmosphere papers in JGR Green issues alternate to those containing upper-atmosphere papers will be continued through 1982. From preliminary indications the experiment seems to be working, but a full year of data, including a renewal cycle, is needed to assess the success of the experiment. Final decision will be made prior to the 1983 dues notices.

Publication of a bimonthly journal devoted to tectonics will begin in 1982. Because there will be no page charges, the journal will be strictly limited as to the number of pages published annually. Printing will be from author-supplied copy. The outline of this proposal was given in the editorial column of the April 7 issue of *Eos*.

The AGU Congressional Science Fellowship was continued for 1982–1983. In discussion of this issue it was noted that congressional staffing tends not to include scientists, and therefore science is not represented in the congressional committees. AGU participates in the AAAS Congressional Fellows Program.

Participation in the AGI (American Geological Institute) Minority Scholarship Program was continued through the 1982–1983 school year. The program has attracted many good applicants. Applicants funded by the AGU contribution are designated AGU scholars.

The sections accepted the responsibility for screening nominations for AGU fellows. It was thought that in this way applicants will be considered first by those most familar with the field.

Touche Ross and Company was selected again as AGU auditors for 1981.

A $10,000 contribution was approved as seed money for planning a series of films in the geophysical sciences. The National Academy of Sciences is investigating the possibility of producing a new series along the lines of those produced after the IGY. If the films go into production, AGU will be listed among the sponsoring organizations.

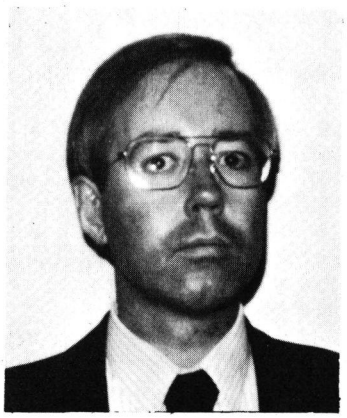
The annual business meeting of the Union was held immediately after the adjournment of the Council meeting.

AGU Awards

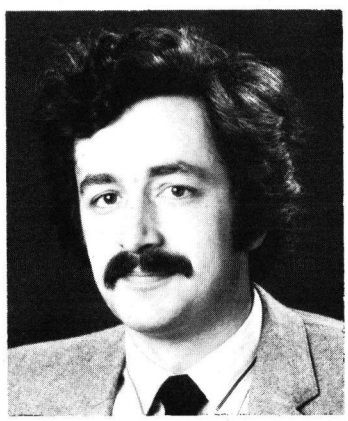
The Twentieth Presentation of the

James B. Macelwane Award
to
Ronald J. Prinn, David Southwood,
and Donald J. Weidner

in recognition of significant contributions to the geophysical sciences by a young scientist of outstanding ability



Ronald G. Prinn



David Southwood

Donald J. Weidner

Citation to Prinn

Mr. President, ladies, and gentlemen: We are honoring tonight a young scientist who combines an unusually broad knowledge of the chemistry and dynamics of planetary atmospheres with a healthy skepticism regarding established dogma and a marvelous ability to shrug off the displeasure of established dogmatists.

Ron Prinn's theoretical research has significantly influenced our understanding of the terrestrial stratosphere as well as the atmospheres of Venus and Jupiter. Since 1980, when he joined the Department of Meteorology at Massachusetts Institute of Technology, he has been a leading participant in collaborative efforts to develop numerical models of the stratosphere combining comprehensive chemistry with realistic dynamics. Such models have been a rich source of controversy in our continuing efforts to predict man's potential impact on the ozone layer. Prinn's work on the chemistry of sulfur gases in the atmosphere of Venus, published in 1973 and 1975, foreshadowed the explosive growth of interest in the sulfur chemistry of the terrestrial atmosphere. By delimiting conditions for the predominance of either sulfur or sulfuric acid in the clouds of Venus, his work provided a basis for the interpretation of Pioneer Venus data. It was Prinn who suggested that the spectacular dark markings on ultraviolet images of Venus are caused by sulfur. More recently he has discussed the contribution of phosphorus to the color of the Great Red Spot on Jupiter. Not forsaking the mother planet, he is currently engaged in efforts to determine from field measurements whether there is any truth in the well-established theory that freon, methyl chloroform, and nitrous oxide are chemically inert in the troposphere.

Mr. President, it is a privilege and pleasure to present Ronald G. Prinn for the James B. Macelwane Award.

James C. G. Walker and
Ralph J. Cicerone

Acceptance

Thank you Jim for your very kind citation. I am flattered to be joining the distinguished list of previous recipients of the Macelwane Award. It is also a delight to be referred to as young again. Back when I was really young, I regarded people over 30 as definitely middle-aged. My work has required me to delve into more than one area of specialization. Fortunately, as I have wandered through the disciplines of meteorology, atmospheric chemistry, and planetary science, I have been treated with mercy by the professionals in these areas. Perhaps this is because the meteorologists think I am an atmospheric chemist, the atmospheric chemists presume I am a planetary scientist, and the planetary scientists see that I am in a meteorology department and my true profession must therefore be weather forecasting. However, I see that the awards committee contains representatives from all three of these disciplines, so I must be immune from such a rib at least for tonight.

Any recognition coming my way this evening must in fact be shared with a number of unselfish friends, collaborators, and colleagues. Let me take this opportunity to mention a few of these people who have influenced my directions in beneficial ways. John Lewis managed to entice me away from a career in molecular quantum mechanics and showed me that speculation can be an occasionally respectable vocation. Norman Phillips successfully guided me into the then largely alien environment of meteorology and was instrumental in the formulation stages of the stratospheric model, which Jim has mentioned. My collaborators in this modeling work, Fred Alyea and Derek Cunnold, have done a large part of the day-to-day work on the model and, in addition, are my collaborators in the fluorocarbon lifetime experiment, which has also been mentioned. Don Hunten has been burdened with refereeing an unseemly number of my publications and has been blunt when necessary and encouraging when needed. Gerry Wasserburg showed me by example that scientists should be actively involved in the occasionally thankless task of guiding and advancing their fields, and not merely reap the benefits of others' efforts in these endeavors.

The citation of my work in planetary atmospheres carries particular pleasure. It has frankly been a joyful task to explore the photochemistry of apparently exotic atmospheric species such as hydrogen chloride, carbonyl sulfide, phosphine, and thiozone. It is also my belief that research in planetary atmospheres can and has had important implications for our own atmosphere, in addition to having its own intrinsic fascination.

I sincerely thank President J. Tuzo Wilson and the American Geophysical Union, and in particular the Macelwane Awards Committee, chaired by Gerry Wasserburg, for this unexpected yet gladly accepted award.

Ronald G. Prinn

Citation to Southwood

It is indeed an honor and a pleasure for me this evening to introduce to you one of the recipients of the Macelwane award, Dr. D. J. Southwood of Imperial College, London, England. This award is presented annually by the American Geophysical Union for outstanding contributions by a young scientist. It is very fitting that David be selected this year.

David, a British citizen, was born in Torquay, England, in 1945. Mothers of small children take heart. According to David's mother he did not utter his first words until after the age of two. However, he has not been at a loss for words since. Shortly thereafter he entered Queen Mary College in London. Later he became a postgraduate student under Professor J. W. Dungey at Imperial College, under whom he wrote a thesis entitled 'Theoretical Studies of ULF Waves in the Magnetosphere,' receiving his Ph.D. in 1964.

Shortly after graduation, David spent a year at UCLA, continuing his work on magnetic pulsations and, on the side, teaching me much of what I know about the underlying physics of the magnetosphere. After his stay at UCLA he returned to Imperial College as a lecturer, but David soon got itchy feet again. However, since then he has usually satisfied his urge to travel by almost annual summer visits to the U.S. We at UCLA have been fortunate enough to have him join us five times in the last 10 years.

David's initial contribution to magnetospheric physics was a theoretical and experimental investigation of the Kelvin-Helmholtz instability at the magnetopause. He later looked at wave-particle resonances within the magnetosphere and their effects on cross L diffusion. Together with his student, W. J. Hughes, he examined the effect of the ionosphere on magnetic pulsations and brought order and comprehension to an otherwise confused situation. Together with Margaret Kivelson of UCLA he examined the effects of electric fields on magnetospheric particle motion and, in particular, aided in the understanding of the physics of particle injection into the magnetosphere. Most recently he has been putting order into our understanding of the way in which the Galilean satellite Io interacts with the Jovian magnetosphere.

I can't help remarking as I did here several years ago (*Eos*, 58, 872–873, 1977) that having a name in the latter half of the alphabet helps one to win the Macelwane award. However, David's deceptively simple name has also led him on occasion to gain less credit than he deserves. Recently, for example, he was referenced seven times in a paper as Southward (*Geophysical Research Letters*, *7*, 881–884, 1980). On another occasion a proposal was sent into NSF with his name on the cover written as Smallwood. Perhaps tonight's ceremonies will help us remember David's real last name.

I would like to close this introduction by reading the citation prepared by the awards committee [and] which very accurately summarizes David's contributions to date.

Over the last 14 years, David Southwood has substantially advanced the application of magnetohydrodynamics to space plasmas and, particularly, to the earth's magnetosphere. His Ph.D. thesis on the Kelvin-Helmholtz instability at the boundary of the magnetosphere was a landmark in the field. Over the last decade, he has become perhaps the leading expert on the theory of magnetohydrodynamic waves in the magnetosphere. He has made a substantial contribution to the theories of magnetic-field-line resonance, of the generation of magnetic pulsations by the Kelvin-Helmholtz instability, and of the influence of the ionosphere as a boundary condition on magnetohydrodynamic waves. In general, his research was a major factor in the theoretical developments needed for the interpretation of the last decade's increasingly sophisticated space- and ground-based observations of 'geomagnetic micropulsations.' He has also worked actively and productively in other areas of space plasma physics. By means of clever but simple calculations, he has contributed significantly to the theory of large-scale plasma motions in the earth's magnetosphere and, particularly, to the understanding of the transport of particles into the ring current and the Van Allen belts. This work on the earth's magnetosphere, and also his very recent work on the interaction of Io with Jupiter's magnetosphere, has been characterized by creativity, by clear intuition, by deep understanding of physics, and by the precious ability to bring theory into effective contact with observations.

Christopher T. Russell

Acceptance

I am very honored to receive this award, and in spite of the citation you have just heard I think my ability has been to be in the right places and to work with the right people.

At Imperial College I work with two close colleagues, Jim Dungey and Stan Cowley, without whom I would not be here. I have worked with Jim since my postgraduate days, and one thing I am indebted to him for is converting me from a mathematician to a physicist, something I have not regretted.

There are large numbers of people I have worked with at UCLA. I shall single out Margaret Kivelson for mention. It is good to work with a clever colleague, even better if she has shared attitudes and complementary skills. I have also noticed she is charming and attractive and a stickler for correct use of grammar.

I have one unusual working relationship. My mother works in the same group as me. We have more or less worked out who works for whom. Though widowed when I was quite young, she successfully raised me and my brother. Late in life she started a technical education only to end up working in the same place as both her sons.

Another close relative to whom I owe a great deal is my wife, Sue, who has divided her attention between activities such as raising our three children, Anna, Michael, and Peter, and ministering to me more than I deserve, but also including setting up her own business and involvement in a variety of outside interests.

There are lots of other people who should share some of my glory. I cannot name them all, but I am aware that a very large fraction are American. Probably all Europeans speculate at some time on the American they might have been. I worked here enough to know, and I have had a fair immersion in American values. I am not original in pointing out values are often hilariously the opposite of my native British ones. Sincerity (or boring seriousness) is an American virtue. Cynical wit (or flippant insincerity) is a prized British social skill. I am busy cultivating a happy schizophrenia where I accept both sides. In particular I like American enthusiasm for hard work and your optimism about change. These latter attitudes make for a dynamism in U.S. science I have always found exciting. Thanks to you all for this.

Finally, let me say something on the virtues of travel. It broadens the mind, challenges the digestion, cements collaboration, helps international understanding but, unfortunately, costs money. I would like to thank the several funding agencies and grant-awarding bodies in the United Kingdom, United States, and elsewhere who have helped me to travel. Was it not a scientist who said, 'If I have traveled further than most, it is because I have been the holder of grants'?

David Southwood

Citation to Weidner

Mr. President, ladies, and gentlemen: I have the pleasure of introducing Donald J. Weidner. He has been a pioneer in the development of the Brillouin scattering method of measuring elastic moduli of minerals. Shortly after joining the faculty of the Department of Earth and Space Sciences at Stony Brook, New York, in 1972, he became interested in Brillouin scattering and started to build a research lab for the application of Brillouin scattering to the investigation of elastic properties of minerals. He recognized the value of the technique in making measurements on very small samples, a capability that makes it particularly attractive for examining quenched high-pressure phases and other samples that are available in very small sizes. In the short time since he established his lab, he and his colleagues and students have made measurements on many important rock-forming minerals and have reported the results in a number of excellent professional papers. In many cases the measurements were made on tiny specimens which are barely visible to the human eye and whose elastic properties could not have been measured in any other way. Concurrent with this work, he has continued his studies in seismology as well as [his] theoretical investigations [into] the elastic properties of crystals.

The development of a new technique and its application to the acquisition of data that would otherwise have been unobtainable is a big challenge. The success of Donald J. Weidner in this endeavor attests to his exceptional abilities as a scientist.

Donald Weidner is not only an accomplished scientist but a person who has already guided and inspired a number of promising younger scientists to begin careers in seismology and solid state geophysics. Mr. President and officers of the Union, I present Donald J. Weidner for presentation of the 1981 Macelwane Award.

Thomas J. Ahrens

Acceptance

Thank you Tom for your kind remarks. I also thank the American Geophysical Union for honoring me with this award.

This award is particularly gratifying to me insomuch as it relates to a few aspects of my life. Every morning when I confront the mirror I discover that my forehead has made yet another advance on my hairline. Even worse, those taller than I tell me that my forehead is about to conquer the very top of my head. I find my joints groaning as I do simple tasks. Graduate students are now handily trouncing me at squash. I look across the campus and ask who are these children, only to find out that they are the graduating class. With all of these observations at hand, I cherish the part of the Macelwane citation which reads "young scientist."

I am also very gratified by the recognition of my research given by this award. As I am sure is true of most of this audience, there have been many hard hours late at night, many frustrations, and a few successes. There are times when we wonder if anyone cares about what we're doing. There are times when we question if we shouldn't be doing something else. The monetary rewards associated with a faculty position are traditionally small. It is under these circumstances that an award such as this one serves to renew one's vigor.

But, in the final analysis we realize that we do not pursue science for the awards or personal recognition. As the physicist, mathematician, philospher Henri Poincaré once said, 'The scientist does not supply nature because it is useful: he studies it because he delights in it, and he delights in it because it is beautiful.' Clearly we hope that our results may be useful to others, but it is the beauty of nature and the excitement of discovery that drives us and not the pursuit of awards.

If Sir Isaac Newton 'stood on the shoulders of giants,' I stand as a dwarf among giants. Many people have helped me personally and professionally. Foremost, is my wife, Deborah, who has cheerfully helped and supported me both in the easy times as well as the hard ones. My brother Jerry showed me by example how a scientist should think. My advisor, Kei Aki, nurtured me at a young age and aided my development. Graduate students at Stony Brook both contributed to my research program and provided water from the fountain of youth. In particular, I wish to acknowledge Michael Vaughan, Alan Kafka, Jay Bass, and Andy Au. The institution of Stony Brook and my colleagues in the Department of Earth and Space Sciences have provided an atmosphere of stimulation, collaboration, and when necessary, equipment that has allowed my research program to advance. The National Science Foundation has been generous in their support. To all of these I am grateful.

Since learning that I was to receive this award I have, on many occasions, considered refusing it. One such time was when I had to prepare this speech. Awards such as this come with many liabilities. University administrations often equate recognition of achievement with administrative ability; the result being a quantum increase in university committee work. One's colleages suddenly become more critical of the research program and question why the AGU committee ever chose this one to receive an award. More importantly, however, such an award brings more responsibility. The recipients must now live up to the honor that they receive. I am awestruck when I read the names of previous recipients of the Macelwane award. The tradition of accomplishment that they have set since receiving this award is intimidating, and living up to this tradition is truly a great challenge. I am honored to have my name listed along with theirs, and in the spirit of accepting this challenge, I gratefully accept the Macelwane award.

Donald J. Weidner

Travel Grants for IAGA and IAMAP Assemblies Awarded

AGU recently received from the National Science Foundation block travel grants for U.S. scientists to attend the Third Scientific Assembly of the International Association of Meterorology and Atmospheric Physics (IAMAP) to be held in Hamburg, Germany, August 17–28, 1981, and the Fourth Scientific Assembly of the International Association of Geomagnetism and Aeronomy (IAGA) to be held August 3–15, 1981, in Edinburgh, Scotland. The IAMAP proposal was cosponsored by American Meterorological Society.

A total of 54 scientists were funded with the two grants, and the scientists ranged in age from 26 to 71, with the average age of 42 for the IAMAP grant recipient and 39 for those receiving IAGA grants. Fifteen were from the eastern part of the country, 18 from the central part, and 21 from the west coast, including Alaska. Two students were among those funded, one from each grant.

There were 53 applicants for funds from the IAMAP grant. Of these, 33 were funded with average grants of $775. Four will go to both the IAGA and the IAMAP meetings: Janet G. Luhmann, Knut H. Stamnes, David J. Stevenson, and Robert G. Roper. Others receiving grants to attend the IAMAP meeting are Richard A. Anthes, Susan K. Avery, Louis J. Battan, Alfred K. Blackadar, David W. Buchanan, Andre A. Doneaud, Kerry A. Emanuel, Claude J. Frankignoul, Michael Garstang, David D. Houghton, Barry J. Huebert, Kolf O. Jayaweera, Carl W. Kreitzberg, Richard Gary Layton, Yeong-Jer Lin, Byard W. Mosher, David G. Murcray, Jerome Namias, Gregory D. Nastrom, Takeshi Ohtake, Joyce E. Penner, Roger A. Pielke, Ruth A. Reck, Gary J. Rottman, Philip B. Russell, David C. Sands, Vinod K. Saxena, Russell C. Schnell, and Anne M. Thompson.

There were 73 applications for funds to attend the IAGA meeting, of which only 21 could be funded. The average grant was $800. Grant recipients are Sushil K. Atreya, Subir K. Banerjee, Jeffrey M. Forbes, Michael D. Fuller, Suman Ganguly, John T. Gosling, John F. Hermance, David D. Jackson, Margaret G. Kivelson, Shailendra Kumar, Steven P. Lund, Christopher P. McKay, Christopher T. Russell, Michael Schulz, Thomas J. Shankland, Antony C. Fraser-Smith, Rob Van der Voo, Craig A. Tepley, Raymond J. Walker, Richard L. Walterscheid, and Richard A. Wolf.